

U.S. Patent Application Serial No. 10/709,138
Reply to OA dated May 12, 2006

REMARKS

Applicant has cancelled Claims 2, 6 and 8 and have amended the claims to better clarify the present invention.

As now amended, independent Claim 1 is to an electroless plating method that has the steps of preparing a substrate having an insulating body and a conductive pattern having electrodes formed on the insulating body, and adhering a catalytic metal serving as a catalyst of an electroless plating onto the insulating body and the conductive pattern. An oxidizing agent which can oxidize the catalytic metal and make the catalytic metal in an inactive state to the electroless plating is selectively coated on the catalytic metal in a space portion S between the electrodes of the conductive pattern, and a metal layer is selectively formed on the conductive pattern by the electroless plating, where the conductive pattern is arranged such that the space portion between the electrodes of the conductive pattern has a plurality of different dimensions, and the oxidizing agent is formed selectively only in portions, which are smaller than a predetermined dimension, out of the space portion between the electrodes of the conductive pattern.

Independent Claim 11, is to an electroless plating method having the steps of: preparing a substrate having an insulating body and a conductive pattern having electrodes formed on the insulating body, and adhering a catalytic metal serving as a catalyst of an electroless plating onto the insulating body and the conductive pattern. A protection film is formed selectively on the catalytic metal in a space portion between the conductive pattern, and a metal layer is formed selectively on the conductive pattern by the electroless plating, with the conductive pattern arranged such that the

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space portion between electrodes of the conductive pattern has a plurality of different dimensions, and the protection film is formed selectively only in portions, which are smaller than a predetermined dimension, out of the space portion between the electrodes of the conductive pattern. Such electroless plating methods are not taught or suggested in the prior art.

In the Office Action, Claims 2, 6 and 8 were rejected under 35 U.S.C. 102(b) on the basis of Miller (U.S. 4,668,533). Claims 2, 6 and 8 are canceled herein and that rejection is moot.

The previous rejection of Claims based on a combination of Svedberg and Drotar in the previous office action has been removed.

Claims 1, 3-5, 7 and 9 have now, however, been rejected as obvious under 35 U.S.C. 103(a) in view of a combination of Lin et al. (U.S. 5,167,992) and Miller (U.S. 4,668,533). In the Office Action, it is alleged that Lin discloses coating a catalytic surface on both an insulating body and conductive pattern with an oxidizing agent and forming an electroless plating over the surface. That reference does not teach selectively applying the oxidizing agent to areas S between the conductive pattern. Miller is then cited as teaching ink jet printing to deposit a catalytic material for electroless plating, and it is alleged that it would be obvious to prevent contact of the oxidizing agent with the conductive pattern because it would deactivate some of the catalyst deposited on the metal.

Applicant does not believe that one would be led to combine the teachings of Lin with Miller to render obvious Applicant's claims absent first reading Applicant's specification. There is no suggestion in Lin of coating selectively an oxidizing agent in a space portion between a conductive pattern since Lin coats the entire surface of the substrate, the metal conductor and exposed substrate

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surface. Even if Miller discloses ink jet printing, the combination of Lin and Miller would not lead to the selective coating method of amended Claim 1. The contents of Claim 5 have been incorporated into Claim 1 to emphasize this distinction. Applicant would point out that it is only disclosed in Lin that an oxidizing agent is coated on the entire surface of the substrate. Also, in Miller, an ink jet method is used, but coating of an oxidizing agent by an injection method is not described.

With the incorporation of the contents of Claim 5 into Claim 1, the method provides for forming selectively a metal layer on the conductive pattern by the electroless plating, wherein the conductive pattern is arranged in a state that the space portion between the electrodes of the conductive pattern has a plurality of different dimensions, and the oxidizing agent is formed selectively in portions, which are smaller than a predetermined dimension, out of the space portion between the electrodes of the conductive pattern. Such is not taught or suggested in Lin or Miller or their combination.

Claim 11, which was added by the previous amendment is rejected in the Office Action as obvious under 35 U.S.C.103(a) in view of a combination of Svedberg et al. (U.S. 6,194,032) and Drotar et al. (U.S. 3,573,973).

The Office Action appears to confuse which space is protected. It is indicated in the last paragraph of Page 6 of the Office Action that it would have been obvious to place a protective film in a space between conductive patterns and have the protective film be smaller than the dimensions of the patterned conductive region. The predetermined dimensions referred to in Claim 11 is space between

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electrodes of the conductive pattern, some spaces being larger than others. Claim 11 has been amended to better define the spaces involved. The Svedberg and Drotar combination would not lead one to the method steps of Claim 11.

In view of the present amendments to the Claims and the above remarks, Claims 1, 3, 4, 7 and 9-11 are believed to be patentable on early action towards allowance thereof is respectfully requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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